Measures of Mobility and some Associated Inference Problems

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Measures of social and occupational mobility based on stochastic models for representing transitions over occupations during generations and over time have been suggested, among others, by Prais (1955), Matras (1960), Bartholomew (1967) and Mukherjee and Basu (1979). But in all these previous works there was no attempt to solve statistical inference problems like the problem of estimating any such measure from the sample data or the problem of testing some hypothesised extent of mobility in a given society.

The present paper deals with some new measures of social mobility based on

1. Plackett's coefficient,
2. Measures of association between two attributes and
3. Minimum discrimination information statistic.

Large sample distribution of a measure suggested earlier and the measure based on minimum discrimination information statistic have been derived. The latter has been derived under the hypotheses of usual interest viz. perfect mobility, perfect immobility, and extreme movement. A numerical illustration has also been provided.

Construction of Group Divisible Second Order Rotatable Designs through Partially Balanced Incomplete Block Designs

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Rotatable designs were introduced by Box and Hunter (1957) for the exploration of response surfaces. Several authors suggested different methods for the construction of second order rotatable designs.

Das and Dey (1967) introduced group divisible second order rotatable designs. They used incomplete block designs for evolving different methods for the construction of these designs. Also, Narasimham, Ramachandra Rao and Sastry (1983) suggested a method for the construction of group divisible second order rotatable designs using balanced incomplete block designs.

In this investigation, a new method for the construction of group divisible second order rotatable designs using partially balanced incomplete block designs is suggested.

A Note on Estimation of Variance in an Exponential Density when the Coefficient of Variation is known

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In this paper an estimator for variance has been obtained which is uniformally better than the usual estimators.